# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/661,279 | 09/14/2000 | Larry Bert Brenner | AUS9-2000-0268-US1 | 8826 |

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| EXAMINER |
|---|
| OPIE, GEORGE L |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2126 | 4 |

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

**Status**

1) ___ Responsive to communication(s) filed on _____.

2a) ___ This action is **FINAL**.        2b) _X_ This action is non-final.

3) ___ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) _X_ Claim(s) _1-50_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ___ Claim(s) _____ is/are allowed.

6) _X_ Claim(s) _1-50_ is/are rejected.

7) ___ Claim(s) _____ is/are objected to.

8) ___ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9) ___ The specification is objected to by the Examiner.

10) ___ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ___ The proposed drawing correction filed on _____ is: a) ___ approved b) ___ disapproved.

12) ___ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

13)_ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

    a) ___ All b) ___ Some * c) ___ None of the CERTIFIED copies of the priority documents have been:

        1. ___ received.

        2. ___ received in Application No. (Series Code / Serial Number) _____.

        3. ___ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ___ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

**Attachment(s)**

14) _X_ Notice of References Cited (PTO-892)

15) ___ Notice of Draftsperson's Patent Drawing Review (PTO-948)

16) ___ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

17) ___ Interview Summary (PTO-413) Paper No(s). _____.

18) ___ Notice of Informal Patent Application (PTO-152)

19) _X_ Other: Text Docs for USP6,304,906 USP5,504,894

## DETAILED ACTION

1.     Request for copy of Applicant's response on floppy disk:
Please help expedite the prosecution of this application by including, along with
your amendment response in paper form, an electronic file copy in WordPerfect,
Microsoft Word, or in ASCII text format on a 3½ inch IBM format floppy disk.
Please include all pending claims along with your responsive remarks.  Only the
paper copy will be entered -- your floppy disk file will be considered a duplicate
copy.  Signatures are not required on the disk copy.  The floppy disk copy is not
mandatory, however, it will help expedite the processing of your application.
Your cooperation is appreciated.

2.            Claim Rejections - 35 U.S.C. § 112

3.     The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out
and distinctly claiming the subject matter which the applicant regards as his
invention.

Claims 2, 25 and 48 have issues that make the claims vague and indefinite.
Confusion arises from the recitation of "shares are used to determined".
Appropriate correction is required.


4.     The U.S. Patents used in the art rejections below have been provided as
text documents which correspond to the U.S. Patents.  The relevant portions of
the text documents are cited according to page and line numbers in the art
rejections below.  For the convenience of Applicant, the cited sections are
highlighted in the *text documents*.  Consistent with Office procedure, the U.S.
Patents corresponding to the *text documents* are also included with this action.

5.            Claim Rejections - 35 U.S.C. § 103

       The following is a quotation of 35 U.S.C. 103(a) which forms the basis for
all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed
or described as set forth in section 102 of this title, if the differences between the
subject matter sought to be patented and the prior art are such that the subject
matter as a whole would have been obvious at the time the invention was made
to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negatived by the manner in which the invention was made.

6.      Claims 1-50 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ferguson et al. (U.S. Patent 5,504,894) in view of Bhatti et al. (U.S. Patent 6,304,906).

As to claim 1, Ferguson teaches a method of workload management in a data processing system (invention to provide a workload manager, p3 1-7) comprising:

> classifying a process (submitted transaction, p4 36-57) into a class of a plurality of predefined classes (plurality of separate transaction classes, p3 1-40)
> performing workload management with respect to classes in other tiers based on priorities of the tiers (workload balancing by providing a scheduling priority for each class of transactions, p 3 17-20).

Ferguson does not explicitly disclose the additional limitations detailed below.

Bhatti teaches the plurality of predefined classes (system includes ... plurality of classes based on a predetermined classification policy, p2 18-47) having corresponding system resource shares and tiers (classes/queues correspond to processing in accordance with a predetermined scheduling policy, p8 15-27) and performing workload management with respect to other classes within a same tier as the class into which the process is classified (simple priority scheduling scheme ... in the first-class queue, p8 32-49) based on the corresponding system resource shares of the class and of the other classes (two-tier or class scheduling ... various weights for different queues, p8 17-52).
It would have been obvious to combine Bhatti's teachings with Ferguson because the priority scheduling system would facilitate the multi-class servicing of goals in the workload manager.

As to claim 2, Bhatti (p8 32-47) teaches "specify an number of processes in the server ... to exclusively support the higher classes and another number  of processes in the server" allocated for the lower classes.

As to claim 3, Bhatti teaches the tiers provide a measure of importance of a class relative to other classes, p8 32-47.

As to claim 4, Ferguson (p3 28-39) teaches the process is classified into a class based on one or more classification rules (grouping of transactions based on a variety of characteristics).

As to claim 5, Bhatti (p8 15-27) teaches storing the process in a workload queue based on the classification of the process into the class (stored in the corresponding queues ... based on the predetermined policy).

As to claim 6, Bhatti teaches "the scheduling policy may specify an number of processes in the server ... to exclusively support the higher classes and another number of processes in the server" assigned as available resources for the lower class, p8 32-44 which correspond to the recitation of a minimum and maximum resource limit allocable for each class.

As to claim 7, Bhatti's "tier or class scheduling policy", p8 39-47 cooresponds to the system resource tiers are organized hierarchically by priority.

As to claim 8, Ferguson (p3 39-47) teaches the performing workload management with respect to other classes within a same tier comprises determining a percentage goal for the process as a function of a number of system resource shares associated with the class in which the process is classified divided by a total number of shares allocated to active classes in the same tier as the class in which the process is classified.

As to claim 9, Ferguson (pp2-3) teaches the process has an associated priority component used, along with the system resource shares of the class, to calculate a resource allocation priority.

As to claims 10-11, see the discussion of claim 8 supra.

As to claim 12, Ferguson (p3 40-47) teaches the "workload manager computes a current average class response time for each transaction class and derives a current class performance index for each of
these classes with respect to its class response time goal. In the preferred embodiment, the current class performance index for a class is the current average class response time for that class divided by the class response time goal for that class. The current average class response times for the transaction classes and the current class performance index for each class is updated as more recent transactions are completed."

As to claim 13, Ferguson teaches "system state information" and more specifically, "resource usage statistics" in connection with each class, p6 14-28.

As to claim 14, Bhatti (p3 40-55) teaches "classification system 100 can also reject requests ... to handle potential overload conditions."

As to claim 15 see the claim 11 discussion.

As to claim 16, Ferguson (p3 17-20) teaches "scheduling priority for each class of transactions and by dynamically adjusting these scheduling priorities in accordance with the response time dissatisfaction performance index."

As to claims 17-22, see the discussions of claims 6-10 supra.

As to claim 23, Bhatti teaches a "simple priority scheduling scheme" allocates resources such that the "first-class queue" of tasks is serviced exclusively before any of the lower priority tiers receives any resources, p8 45-50.

As to claims 24-46, note the rejections of claims 1-23 above. Claims 24-46 are the same as claims 1-23, except claims 24-46 are apparatus claims and claims 1-23 are method claims.

As to claims 47-50, note the rejection of claims 1-4 above. Claims 47-50 are the same as claims 1-4, except claims 47-50 are apparatus claims and claims 1-4 are method claims.


7.      The prior art of record and not relied upon is considered pertinent to the applicant's disclosure. Each reference disclosed below is relevant to one or more of the Applicant's claimed invention.
U.S. Patent No. 6,560,649 to Mullen et al. which teaches the hierarchical classification of tasks into work-groups;
U.S. Patent No. 6,418,459 to Gulick which teaches the multi-tier ordering of processes with respect to resource requirements;
U.S. Patent No. 6,385,639 to Togawa which teaches the intergroup resource utilization;
U.S. Patent No. 6,341,303 to Rhee et al. which teaches the administration of resources to classes of tasks for achieving performance plans;
U.S. Patent No. 6,108,683 to Kamada et al. which teaches the prioritized allocation of resources to job-groups;
U.S. Patent No. 5,991,793 to Mukaida et al. which teaches the managing of process units for governing prioritized program class execution;
U.S. Patent No. 5,748,958 to Badovinatz et al. which teaches the controlling of process groups for workload goals;
U.S. Patent No. 5,682,530 to Shimamura et al. which teaches the hierarchical arrangement of tasks in resource groups;
U.S. Patent No. 5,640,595 to Baugher et al. which teaches the resource reservation for job classes; and,
U.S. Patent No. 5,603,029 to Aman et al. which teaches the dynamic adjustment of resource allocations to work groups.
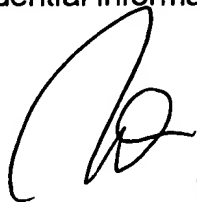
## 8.   Contact Information:

PTO Policy for Facsimile Submissions:
☐   AFTER-FINAL faxes must be signed and sent to (703) 746-7238.
☐   OFFICIAL faxes must be signed and sent to (703) 746-7239.
☐   NON OFFICIAL faxes should be sent to (703) 746-7240.

> All OFFICIAL faxes will be handled and entered by the docketing personnel.  The date of entry will correspond to the actual FAX reception date unless that date is a Saturday, Sunday, or a Federal Holiday within the District of Columbia, in which case the official date of receipt will be the next business day. The application file will be promptly forwarded to the Examiner unless the application file must be sent to another area of the Office, e.g., Finance Division for fee charging, etc.

☐   All responses sent by U.S. Mail should be mailed to:
> **Commissioner for Patents**
> **PO Box 1450**
> **Alexandria, VA 22313-1450**

☐   Hand-delivered responses should be brought to Crystal Park Two,  2021 Crystal Drive, Arlington, VA., Sixth Floor  (Receptionist). All hand-delivered responses will be handled and entered by the docketing personnel. Please do not hand deliver responses directly to the Examiner.

☐   Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist at **(703) 305-9600.**

☐   Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Opie at (703) 308-9120 or via e-mail at *George.Opie@uspto.gov.*  Internet e-mail should not be used where sensitive data will be exchanged or where there exists a possibility that sensitive data could be identified unless there is an express waiver of the confidentiality requirements under 35 U.S.C. 122 by the Applicant.  Sensitive data includes confidential information related to patent applications.

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